S. R. S. Doc. 10.
Ext. N.—Form O-6.

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS.

U. S. DEPARTMENT OF AGRICULTURE AND STATE AGRICULTURAL COLLEGES, COOPERATING.

STATES RELATIONS SERVICE, OFFICE OF EXTENSION WORK IN THE NORTH AND WEST, WASHINGTON, D. C.

BOYS' AND GIRLS' CLUB WORK.

HINTS TO POTATO GROWERS.

By Geo. E. Farrell,
Assistant in Club Work, Northern and Western States.

1. A loose, rich, gravelly or sandy loam soil is desirable in the production of potatoes.

2. Manure should be applied to crop that precedes rather than to the potato crop.

3. A clover, alfalfa, cowpea, or soy-bean sod, plowed under in the fall, will make a good potato seed bed. Measure depth of furrow to see that it is 8 inches or more deep.

4. Like produces like. Hill-selected seed potatoes should be more productive than those from unselected plants.

5. If potatoes are sprouted in the light before planting it will hasten growth. Sprouts should be one-fourth inch long.

6. Treat all seed potatoes with formalin for scab before planting. If you do not know how to give this treatment, write for instructions. See Bureau of Plant Industry Doc. 884.

7. Do not plant late potatoes too early. Late potatoes planted early are checked during the dry summer and fail to mature a full crop. As a rule the yield is light and the tubers small.

8. Never follow potatoes with potatoes. Rotate crops. Plan a three or four year rotation.

9. A well-prepared seed bed is firm and in good tilth. Preparation before planting is half the battle.

10. Spray plants with Bordeaux mixture at least four times at two-week intervals after the potatoes are up.

11. Arsenate of lead added to the above mixture will destroy bugs.

12. Don't wait until the bugs begin work. Get the arsenate of lead or Paris green on the plants first.

13. A crop of 200 bushels of potatoes requires 650 tons of water—equivalent to 6 inches of rainfall. Destroy the weeds. Keep a dust mulch on your field to save moisture.

14. Harrow the soil before the plants appear above ground and cultivate six or seven times during the season.

15. Make it a business to push the potatoes. Do not allow the potatoes to push you.

16. When growing potatoes on irrigated land the following things are essential: A carefully leveled piece of ground with a fall of not more than 1½ feet to the hundred, plenty of water, good drainage for surplus water, and a careful study of methods suggested by the State college of agriculture.

17. In growing potatoes in the Great Plains or dry-land section every method should be used to store up moisture and conserve the supply. Cultivation and early planting are essential.

18. Write to the agricultural college of your State for information on potato culture especially adapted to your State and locality.

2778°—15

When you have enrolled as a member of the Potato Club, begin at once to keep an accurate record of everything that is done and that happens in your plat. Make a study of page 2 of the crop report blank and fill in the information as you gather it. A small, convenient notebook to carry in the pocket or keep on your desk, to make notes on the ground, is a necessary part of the equipment of a club member. The following will suggest a method of keeping the daily record of your activities. It is not a complete record for the year, but shows how to enter the various items in your notebook.

RECORD OF JOHN BROWN, MEMBER OP POTATO CLUB.

1914.

October 20.—Measured off a piece of clover sod 4 rods by 5 rods and placed stakes in the corner. One-half hour, 5 cents.

October 21.—Plowed the above plat to a depth of 6 inches with a team and riding plow. Time required to do the work, 1 hour for self and team, 20 cents.

1915.

March 20.—Purchased from P. Smith 2 bushels of Rural New Yorker No. 2, hill-selected seed potatoes, at $2.50 per bushel. Mr. Smith agreed to store potatoes until I called for them, $5.

May 15.—Plowed plat to a depth of 8 inches with team and riding plow. Time required, 1 hour for self and team, 20 cents. Disk harrowed twice and dragged with a smoothing harrow twice. Time required, 1½ hours, self and team, 30 cents.

May 22.—Smooth harrowed twice. Time, 30 minutes, self and team, 10 cents.

May 29.—Smooth harrowed twice. Time, 30 minutes, man at 20 cents, team at 20 cents per hour, 20 cents.

June 5.—Smooth harrowed twice. Time, 30 minutes, self and team, 10 cents.

June 12.—Smooth harrowed twice. Time, 30 minutes. Got on the ground a little too early after rain. Self and team, 10 cents.

June 15.—Secured my potatoes from Mr. Smith and placed them on the hay barn floor to sprout. Treated seed with formalin for scab. One hour, self, 10 cents.

June 19.—Cut seed, leaving 4 eyes on each piece, and planted 4 inches deep, 12 inches apart in the row, and the rows 36 inches apart. Work done by hand. Time, 5 hours for self, 50 cents.

October 15.—Went over row No. 1 and dug by hand the hills that had strong plants. Picked hills that were free from disease and had from 4 to 8 medium large, uniform, smooth, shallow-eyed potatoes. Gathered 3 bushels of good seed. Dried, sacked, and stored. Time required to do the work, 5 hours, 50 cents. Eighty pounds of marketable potatoes were gathered and 30 pounds of culls.

October 20.—Dug row No. 2. Gathered and weighed after potatoes were thoroughly dried. Four hundred and eighty pounds of marketable potatoes were gathered and 80 pounds of culls. Cleaned, crated, and packed in cellar. Time, 5 hours, 50 cents.

October 22.—Used 160 pounds of culls. Washed, ground, etc., as directed in Form O–4. Time, 4 hours, at 10 cents, 40 cents.

October 23.—Washed starch as directed, ½ hour, 5 cents.

October 24.—Washed starch and dried as directed, 1 hour, 10 cents.

October 25.—Weighed starch and packed in fruit jars. Made 16 pounds. Time, ½ hour, 5 cents.

November 1.—Yield figured 24 bushels marketable potatoes.

November 2.—Sold to John Brown, neighbor, 8 bushels potatoes, at 75 cents per bushel, $6.

November 3.—Sold mother 16 pounds starch, at 10 cents per pound, $1.60.

November 29.—

Receipts:

24 bushels potatoes at 75 cents		$18.00
32 pounds of starch at 8 cents		2.56
		20.56

Expenses:

Rent	$0.50	
Labor, seed, etc	6.90	
		7.40
Net profit		13.16

GRADING, CRATING, CULLS.

After you have grown a good crop of potatoes, you may lose all of your profits by careless handling. A light box, 12½ inches deep, 13½ inches wide, and 16 inches long, filled level full, will hold about a bushel. This size has been found to be the most convenient to handle and haul.

Pick all sound, smooth, marketable potatoes into these boxes, removing soil while picking. Allow the culls to remain on the ground to be picked later. As soon as a load is prepared haul to storage or market. These neat boxes are a good advertisement and secure customers where the products of the scoop-shovel, loose-load salesman will receive no consideration.

If it is necessary to wash the potatoes, dry them well before packing in crates for storage or shipment. A well-ripened tuber is not affected by washing if it is properly dried. Washed potatoes secure the highest market price on account of their appearance and keeping qualities.

The culls should be gathered and may be used in making starch for human food. See Form O–4 or U. S. Department of Agriculture, Bureau of Plant Industry Doc. 884.

WHEN AND HOW TO SELECT SEED POTATOES.

When the time for digging arrives, take a potato fork and throw out each hill separately, making sure that the hills are not mixed in the digging. Gather in a sack the hills that have the greatest number of large, smooth, shallow-eyed potatoes, which are true to type. Reject all hills that are diseased, that contain a large number of culls, or are large but not true to the type planted. The potato reproduces the hill; therefore use practically all potatoes found in the selected hills as seed. The seed should be sacked and the bag closed with a strong string tied with a hard knot. Members of the family will not make a mistake and use the seed for food if the hard knot is tied.

DIGGING AND MEASURING.

If your plat is square or rectangular and contains one-eighth of an acre, the length in feet multiplied by the width in feet will produce 5,445 square feet. Make sure of the size of your plat before beginning the digging. If it is too large, stake off the excess. Number the rows, one, two, three; one, two, three, etc., across the field. Dig all rows numbered 1 for seed as directed above. Dig all rows numbered 2 for measurement and multiply the yield by three to estimate the yield for your plat. Notify the State agent and the county agent or leader by letter of the estimate you have made of your yield and that if you do not hear from them in 10 days you will select two judges and dig row No. 3. Invite all club members in your vicinity to attend the digging and ask two neighbors (not relatives) to act as witnesses. Have a tapeline and scales ready for the work. Have the witnesses measure the plat and insert the measurements in the proper place on the report. Dig row No. 3 and after soil has dried (two to four hours) have the witnesses weigh the potatoes. If you have a camera, get several good pictures of the measuring, digging, and weighing, with some showing yourself in action or sitting by pile of potatoes from row or plat.

Estimate the yield for the plat by adding the yield of rows 2 and 3 and dividing by two and multiplying by three. Insert the yield in the proper place in the report and have the witnesses sign. Make a copy of your report and mail the original with the story "How I Made My Crop" to the county agent, leader, or to the State agent in charge of club work, college of agriculture, or, if your State has no leader, to Farmers' Cooperative Demonstrations, Northern and Western States, Washington, D. C.

PREPARING THE EXHIBIT.

Make a study of pictures showing the type of potatoes that you are growing. Go through the field and select the hills that have vigorous, medium-growth plants, and turn these hills out, very carefully, with a fork. Select all potatoes that appear true to type and take them home for study. Do not allow them to sunburn. Place the potatoes on a table and select one that you believe true to type. Weigh it and measure it both ways, and then proceed to select, weighing and measuring each potato selected, to be sure that it is a near duplicate of the first one selected. You have now selected for size and shape. Remove every particle of dirt from each potato and reject all that show injuries, bruises, or diseased skin. Then reject all that are darker or lighter in color than the type potato. Select from the remaining potatoes those that have a medium number of well-distributed, shallow eyes.

Secure a box that will hold the exhibit in a single layer. Pad the bottom with soft paper and wrap the lower half of each potato in tissue paper, and pack this carefully away from the light. Deliver your exhibit early and secure for it a place that will show it to advantage.

MARKETING HILL-SELECTED SEED.

Write to the State agent in charge of club work and ask for seed potato 4–H brand labels. Store your seed potatoes in a cool, dark place that is frost proof. The seed may be stored with other potatoes if the bags are securely tied. Cover the potatoes with an old rug or bag to keep them from sunburning. Potatoes will sunburn in a cellar with a small window, even though the sun does not strike them. Exhibit your potatoes at the fair and other events, and be on the spot with pad and pencil to take the names of interested growers or to take orders for spring delivery of your seed as well as market grade. Ship the potatoes in boxes. Attach to each box a 4–H brand label, with all blanks properly filled and signed.

A study of the market will tell you when to sell. Unless you have a suitable place to store, it is wise to market direct from the field. Put down the winter supply as suggested for seed.

COMPLETING REPORT.

If you want an extra copy of the report blank, Form O–3, write to the State agent in charge of club work, or the Office of Extension Work, North and West, Department of Agriculture, Washington, D. C. Fill out your old report in pencil and submit it to your teacher for suggestions. After you have made all corrections, copy it with pen and ink on a new blank, and have it all ready for signature of the witnesses and teacher or leader when row No. 3 is dug. Ask your teacher to inspect the final report. Mail this with the story, "How I Made My Crop," to the State agent in club work, or if you have none, to the Office of Extension Work, North and West, Department of Agriculture, Washington, D. C., not later than December 1.

----------,
State Agent in Charge of Club Work.

Recommended.
O. H. Benson,
In Charge Club Work, North and West.

Approved.
C. B. Smith, *Chief,*
Office of Extension Work in the North and West.

WASHINGTON : GOVERNMENT PRINTING OFFICE : 1915